

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte TOSHIO NORITA, TAKASHI KONDO, EIRO FUJII, and FUMIYA YAGI

Appeal No. 2003-1611
Application No. 09/243,794

HEARD: Jan. 6, 2004

Before BARRETT, BARRY, and SAADAT, *Administrative Patent Judges*.
BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 22-24. The appellants appeal therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The invention at issue on appeal relates to three-dimensional ("3-D") measurements. 3-D measurements of human bodies around the entire circumference thereof have been made in fields such as medicine and apparel for many years. (Spec. at 1.) According to the appellants, however, conventional mechanisms for making 3-D

measurements have been "complex" and "the time required for measuring [has been] long." (*Id.* at 2.)

Accordingly, the object of the appellants' invention is to measure 3-D data on a "target" around the entire circumference thereof "at high speed using a relatively simple configuration. . . ." (*Id.* at 3.) More specifically, the target is placed in an interior space of a rotator type mirror. Reference light is projected toward the mirror from a position on the center axis of thereof. The target is scanned with reference light reflected from the mirror. 3-D data describing the target are obtained based on the projection angle of the reference light and on the position of a projected image obtained when the reflected light that scanned the target is captured by an imaging apparatus via the mirror. (*Id.* at 3-4.)

A further understanding of the invention can be achieved by reading the following claim.

22. A three dimensional information measurement apparatus for measuring three dimensional information on a target, comprising:

a mirror having mirror surface facing to a space in which the target is placed;

a reference light projection apparatus for projecting reference light to the target placed in the space via reflection of the mirror surface;

an imaging apparatus for imaging the reference light on the target via reflection of the mirror surface; and

a processor for generating a three dimensional information of a portion of the target on where the reference light is projected.

Claims 22-24 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,461,478 ("Sakakibara").

OPINION

Rather than reiterate the positions of the examiner or the appellants *in toto*, we address the point of contention therebetween. The examiner asserts, "Sakakibara does teach imaging apparatus (camera 4) for imaging the reference light on the target via reflection of the mirror surface. Wherein mirror reflects light onto the target and imaging apparatus images the reference light on the target. This is cited Col. 5 lines 60-61." (Examiner's Answer at 6.) The appellants argue, "the camera 4 does not image reference light on a target *via a reflection of a mirror' surface*. . . ." (Reply Br.¹ at 3.) In addressing the point of contention, the Board conducts a two-step analysis. First, we construe the representative claim to determine its scope. Second, we determine whether the construed claim is anticipated.

¹The appellants admit, "the Board may properly review th[e] Reply Brief without necessarily being familiar with the Brief for Appellant." (Reply Br. at 1.)

1. CLAIM CONSTRUCTION

"Analysis begins with a key legal question -- *what* is the invention *claimed*?"

Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). Here, claim 22 recites in pertinent part the following limitations: "a reference light projection apparatus for projecting reference light to the target placed in the space via reflection of the mirror surface; an imaging apparatus for imaging the reference light on the target via reflection of the mirror surface. . . ." Accordingly, the independent claim requires imaging reference light on a target via reflection of the light from the surface of a mirror.

2. ANTICIPATION DETERMINATION

"Having construed the claim limitations at issue, we now compare the claims to the prior art to determine if the prior art anticipates those claims." *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349, 64 USPQ2d 1202, 1206 (Fed. Cir. 2002). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (citing *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715, 223 USPQ 1264, 1270 (Fed. Cir. 1984); *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548, 220 USPQ 193, 198 (Fed. Cir. 1983); *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771,

218 USPQ 781, 789 (Fed. Cir. 1983)). "[T]here is no anticipation 'unless all of the same elements are found in exactly the same situation and united in the same way . . . in a single prior art reference.'" *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 894, 221 USPQ 669, 673 (Fed. Cir. 1984) (citing *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983)).

Here, Sakakibara discloses "an apparatus capable of measuring the three-dimensional position and orientation of an object having a complicated shape. . . ." Col. 2, ll. 33-36. "A first light projector 3V is arranged so as to be horizontally aligned with a solid-state imaging camera (hereinafter referred to as 'CCD camera') 4, and a second light projector 3H is arranged so as to be vertically aligned with the CCD camera 4." Col. 5, ll. 2-6. More "[s]pecifically, the first light projector 3V is positioned so that a vertical slit light 6V with respect to the visual field of the CCD camera 4 is projected therefrom onto an object 5, and the second light projector 3H is positioned so that a horizontal slit light 6H with respect to the visual field of the CCD camera 4 is projected therefrom onto the object 5." *Id.* at ll. 6-12. Inside the light projectors, "[a] laser beam output from [a] laser diode 21 passes through a cylindrical lens 22 where it is expanded in one direction and formed into a slit light, and this slit light 6 is reflected at a rotary mirror 24 of the scanner 23 to be projected onto the object." *Id.* at ll. 35-39.

Although "[a]n image of the slit light . . . is obtained by the CCD camera 4," *id.* at ll. 60-61, we are unpersuaded that image is obtained via reflection of the slit light from the surface of the rotary mirror. To the contrary, Figures 1 and 9 show that the CCD camera obtains the image directly from the object. Therefore, we reverse the anticipation rejection of claim 22 and of claims 23 and 24, which depend therefrom.

CONCLUSION

In summary, the rejection of claims 22-24 under § 102(b) is reversed.

REVERSED

LEE E. BARRETT
Administrative Patent Judge

LANCE LEONARD BARRY
Administrative Patent Judge

MAHSHID D. SAADAT
Administrative Patent Judge

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Appeal No. 2003-1611
Application No. 09/243,794

Page 8

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